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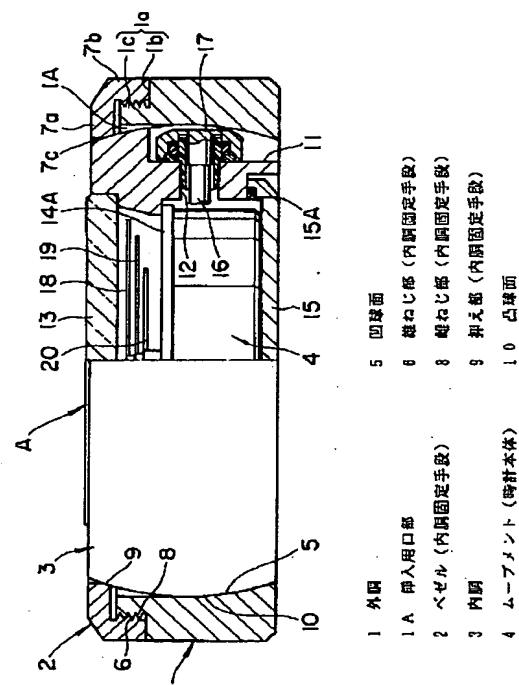
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(54) 【発明の名称】 内胴回転式時計

(57) 【要約】

【課題】 内胴を回転させて時間表示を自分の好みの位置に確実に設定できる内胴回転式時計を提供する。

【解決手段】 外胴1の内部に、時間表示をする内胴3を回転可能に収納した内胴回転式時計において、内胴3の外周部に凸球面10を形成し、外胴1の内部を、内胴3の凸球面10が摺接する凹球面5に形成する。外胴1に、内胴3を凹球面5に挿入する挿入用口部1Aを形成し、挿入用口部1Aの外周に雄ねじ部6を形成し、雄ねじ部6に雌ねじ部8を螺合させてベゼル2を設ける。ベゼル2に、外胴1の凹球面5に挿入された内胴3に当接して内胴3を押える押え部9を形成して構成した。



【特許請求の範囲】

【請求項 1】 外胴の内部に、時計本体を有する内胴を回転可能に収納した内胴回転式時計において、前記外胴に前記内胴側に進退動して前進時に前記内胴を押え固定する内胴固定手段を設けたことを特徴とする内胴回転式時計。

【請求項 2】 外胴の内部に、時計本体を有する内胴を回転可能に収納した内胴回転式時計において、前記内胴の外周部に凸球面を形成し、前記外胴の内部を、前記内胴の前記凸球面が摺接する凹球面に形成すると共に、前記外胴に、前記内胴を前記凹球面に挿入する挿入用口部を形成し、前記挿入用口部に、前記外胴の前記凹球面に挿入された前記内胴側に進退動して前進時に前記内胴を押え固定する内胴固定手段を設けたことを特徴とする内胴回転式時計。

【請求項 3】 前記内胴固定手段を、前記挿入用口部の外周に雄ねじ部を形成し、前記雄ねじ部に雌ねじ部を螺合させてベゼルを設け、前記ベゼルに、前記外胴の前記凹球面に挿入された前記内胴に当接して前記内胴を押える押え部を形成して構成した請求項 2 に記載の内胴回転式時計。

【請求項 4】 前記押え部を、前記ベゼルに、前記内胴の前記凸球面と同じ曲率の凹球面を形成して構成した請求項 3 に記載の内胴回転式時計。

【請求項 5】 前記押え部を、前記ベゼルに装着した弾性部材で構成した請求項 3 に記載の内胴回転式時計。

【発明の詳細な説明】**【0001】**

【発明の属する技術分野】本発明は、外胴の内部に、時計本体を有する内胴を回転可能に収納した腕時計などの内胴回転式時計に関する。

【0002】

【従来の技術】従来、外胴の内部に、時計本体を有する内胴を回転可能に収納した腕時計として、特開昭 49-49671 号公報に開示された技術がある。

【0003】この腕時計は、外胴と内胴とを備える。外胴は、その内周が凹球面になっていて、第 1 の外胴部と第 2 の外胴部とに分割できる構成である。すなわち、第 1 の外胴部の分割部位には雌ねじ部が形成してあり、第 2 の外胴部の分割部位には雄ねじ部が形成してある。そして、この雄ねじ部を雌ねじ部に螺合することにより第 1、第 2 の外胴部を互い結合して構成してある。

【0004】また、内胴は、その内周側に時計本体（ムーブメント、風防ガラス、文字盤等）を有する。内胴の外周は、外胴の内周面の凹球面と同じ曲率の凸球面で形成してある。内胴の外周が形成する球心は、凹球面が形成する球心に一致するものである。

【0005】そして、外胴を、第 1 の外胴部と第 2 の外胴部とに分割した状態で、その内周側に内胴を収容す

る。次いで、雄ねじ部を雌ねじ部に螺合することにより第 1、第 2 の外胴部を互い結合する。すると、内周の凹球面に、内胴の外周の凸球面を摺接する。かくして、内胴が外胴より抜脱すること無く、内胴があらゆる方向に回転できる腕時計が構成される。

【0006】

【発明が解決しようとする課題】しかしながら、上記のような内胴がすべての方向に回転できる腕時計では、時間表示が自分の好みの位置に来るように内胴を回転させても、この内胴を固定する手段がないために、時間表示を自分の好みの位置に確実に停止させることができないという問題点があった。

【0007】本発明は、かかる従来の問題点に着目して成されたものであって、その目的とするところは、内胴を回転させて時間表示を自分の好みの位置に確実に設定できる内胴回転式時計を提供することにある。

【0008】

【課題を解決するための手段】上記の目的を達成するために、請求項 1 の発明によれば、内胴固定手段により外胴の内部に挿入された内胴を押え固定する。そして、内胴固定手段を解除すれば、内胴の回転が再び自在になる。また、上記の目的を達成するために、請求項 2 の発明によれば、内胴固定手段により外胴の前記凹球面に挿入された内胴を押え固定する。そして、内胴固定手段による内胴固定を解除した状態では、内胴は、その凸球面を外胴の凹球面に摺接させた状態で全方向に回転が自在になる。

【0009】したがって、時間表示が自分の好みの位置に来るように内胴を回転させ、この内胴を内胴固定手段により固定することができるために、時間表示を自分の好みの位置に確実に合わせることができ、例えば、時差の関係で時間を変更する場合には、時計本体の 12 時の位置を 3 時方向に一致するように内胴を回転させ、内胴を内胴固定手段により固定することにより、この 12 時の位置を、正確に 3 時方向に一致させることができ、時間変更を容易に行うことができる。

【0010】また、上記の目的を達成するために、請求項 3 の発明によれば、ベゼルの回転することにより、ベゼルのねじ送りにより内胴側に移動して、ベゼルの押え部を外胴の凸球面に当接させて内胴の固定を行い、ベゼルの内胴固定の場合とは逆方向に回転することにより、ベゼルのねじ送りにより内胴側とは反対側に移動して、ベゼルの押え部を外胴の外周面より離して、内胴の固定を解除する。この状態では、内胴は、その凸球面から成る外周面を外胴の内周面の凹球面に摺接させた状態で全方向に回転が自在になる。

【0011】したがって、時間表示が自分の好みの位置に来るように内胴を回転させ、ベゼルの回転することにより、ベゼルのねじ送りにより内胴側に移動して、ベゼルの押え部を外胴の凸球面に当接させて内胴を固定する

ことができるために、時間表示を自分の好みの位置に確実に合わせることができ、例えば、時差の関係で時間を変更する場合には、内胴が備える時計本体の12時の位置を3時方向に一致するように内胴を回転させても、12時の位置がずれることがなく、確実に12時の位置を3時方向に一致させることができ、時間変更を容易に行うことができる。

【0012】また、上記の目的を達成するために、請求項4の発明によれば、前記押え部を、前記ベゼルに、前記内胴の前記凸球面と同じ曲率の凹球面を形成して構成することにより、内胴固定の際の内胴の押えを確実に行うことができ、内胴固定を確実に行うことができる。

【0013】また、上記の目的を達成するために、請求項5の発明によれば、前記ベゼルに装着した弾性部材で構成したことにより、押え部の内胴の外周面への圧接による、この外周面に付く傷を無くすことが可能になる。

【0014】

【発明の実施の形態】以下、本発明の実施例を図面を参照して説明する。

【0015】図1は本発明に係る内胴回転式時計の分解状態の斜視図、図2は同内胴回転式時計において内胴固定状態の断面図、図3は同内胴回転式時計において内胴解放状態の断面図である。

【0016】内胴回転式時計としての腕時計は、外胴（ケース）1とベゼル2と内胴3とこの内胴3に装着された時計本体Aとを備える。図1に示されるように、外胴（ケース）1には、対向して相反する方向に延出するところの、公知である一方の一对のアームと他方の一对のアームが備えられる。当該一对のアームそれぞれには、公知の連結手段によりバンドが取り付けられる。かくして、時計本体Aは腕時計として構成される。外胴1の内周面は、その上部の直筒状の挿入用口部1Aを除いて凹球面5に成される。外胴1の挿入用口部1Aの外周には段部1aが全周に亘って形成される。この段部1aは水平面部1bと垂直面部1cとを有しており、垂直面部1cには雄ねじ部6が形成される。

【0017】前記ベゼル2は、平面視でリング体であって、断面が水平部7aと垂直部7bとを有する倒立L形状である。垂直部7bの内周面には全周に亘って雌ねじ部8が形成してある。そして、水平部7aの内周面7cの下縁部には押え部9が形成してあり、この押え部9は、後述する内胴3の凸球面10と同じ曲率の凹球面を形成される。

【0018】前記内胴3は外胴1の凹球面5内に摺動状態で回転可能に収納されるものである。内胴3の外周面は、外胴1の内周面の凹球面5と同じ曲率の凸球面10で形成され、内胴3の凸球面10が形成する球心は、凹球面5が形成する球心に一致するものである。この凸球面10にはリユーズ収納用凹部11が形成してあり、この凹部リユーズ収納用11の底部には内胴3の内部に抜

ける孔部12が形成してある。そして、内胴3内にはムーブメント4が收容される。また、内胴3の上面開口には風防ガラス13が嵌着される。風防ガラス13の下方には時刻を表示する文字盤14Aがムーブメント4の上面に位置させて設けられる。外胴1の下面開口にパッキン15Aを介して裏蓋15が取り付けられる。

【0019】また、ムーブメント4に設けたリユーズ軸部16は孔部12を介してリユーズ収納用凹部11内に突入しており、この突入端部にはリユーズ17が取り付けられている。このリユーズ17は凹部11内に收容してあり、このリユーズ17は日付け・曜日修正及び針合せ秒規正の場合にはリユーズ収納用凹部11外に段階的に引き出せるものである。なお、18は秒針、19は分針、20は時計針である。そして、ムーブメント4と風防ガラス13と文字盤14Aと秒針18と分針19と時計針20等で時計本体Aを構成している。

【0020】そして、上記したように内部にムーブメント4を装着した内胴3を、外胴1の挿入用口部1A側から内部に挿入して、この内胴3の凸球面10を、外胴1の内周面の凹球面5に摺接し、外胴1の挿入用口部1Aに、これの段部1aの雄ねじ部6に雌ねじ部8を螺合させてベゼル2を設け、このベゼル2を回転することにより、ベゼル2をねじ送りにより内胴3側に移動して、その押え部9を内胴3の凸球面10に圧接して、内胴3を所定の位置に固定して、内胴回転式時計としての腕時計が構成してある。この場合、挿入用口部1Aの外周に形成された雄ねじ部6と、この雄ねじ部8に雌ねじ部8を螺合させたベゼル2と、このベゼル2に形成された押え部9とで内胴固定手段を構成している。

【0021】次に、上記のように構成された内胴回転式時計の作動を説明する。前記ベゼル2を、上記した内胴固定（ベゼル2をねじ送りにより内胴3側に移動するように回転し内胴3を固定する）の場合とは逆方向に回転することにより、ベゼル2をねじ送りにより内胴3側とは反対側に移動して、図3に示すようにベゼル3の押え部9を外胴1の凸球面10より離して、凸球面10の凹球面5への圧接を解除して内胴3の固定を解除する。この状態では、内胴3は、その凸球面10を外胴1の内周面の凹球面5に摺接させた状態で全方向に回転が自在になる。

【0022】したがって、時間表示を自分の好みの位置に合わせたい場合には、そのように内胴3を回転させて、ベゼル2を内胴固定の方向に回転してベゼル2をねじ送りにより内胴3側に移動して、その押え部9を内胴3の凸球面10に圧接して、内胴3を固定する。

【0023】例えば、時差の関係で時間を変更する場合には、図4の（1）に示す12時の位置を図4の（2）に示すように3時方向に一致するように内胴3を回転させて、ベゼル2を内胴固定の方向に回転してベゼル2をねじ送りにより内胴3側に移動して、図2に示すよう

に、その押え部 9 を内胴 3 の凸球面 10 に圧接して、内胴 3 を固定する。

【0024】また、図 5 及び図 6 に示すように、内胴 3 を大きく回転させて、ベゼル 2 を回転することにより、ベゼル 2 をねじ送りにより内胴 3 側に移動して、その押え部 9 を内胴 3 の凸球面 10 に圧接（圧接部分を格子斜線で示す）して、内胴 3 を所定の位置に固定する。したがって、内胴 3 をあらゆる方向に回転し、その姿勢位置で固定することができる。このために、内胴 3 を好みの姿勢で固定できて、時間表示が見易くなる。このように、外胴 1 に対して、時計本体 A の表裏方向に沿い、内胴 3 を所定の角度で立ち上げらせるように傾けて固定すれば、自動車を運転中のドライバーにとって極めて時間表示が見易くなる。なぜならば、通常、運転中のドライバーの手首の甲は外側を向くため、従来の腕時計の時刻表示は、手首を捻らないかぎり、ドライバーに視認されにくいからである。同様の理由で、二輪車を運転するライダーに専用のウォッチとしても使用できる。

【0025】また、日付け・曜日修正及び針合せ秒規正の場合には、上記したように内胴 3 を回転自在にした状態で、この内胴 3 を、そのリユーズ 17 側が、外胴 1 の外方に出るように回転させて、リユーズ 17 を凹部 11 内より段階的に引き出して回転することにより、日付け・曜日修正もしくは針合せ秒規正を行う。

【0026】上記した内胴回転式時計の場合、内胴固定の場合に、内胴 3 の凸球面 10 に圧接するベゼル 2 の押え部 9 を、水平部 7 a の内周面 7 c の下縁部に凹球面を形成して構成したが、図 7 及び図 8 に示すようにベゼル 2 の水平部 7 a の先側の内、外面に周方向に沿う係止溝 21 を形成して、弾性材料、例えばゴムを材料にしたリング状で且つ断面略 C 形状のパッキン 22 を、その両端の周縁部 22 a を係止溝 21 に係止して、水平部 7 a の先側に取り付けて、パッキン 22 を押え部 9 としてもよい。

【0027】したがって、内胴固定の場合には、ベゼル 2 を内胴固定の方向に回転してベゼル 2 をねじ送りにより内胴 3 側に移動して、パッキン 22 で構成された押え部 9 を内胴 3 の凸球面 10 に圧接して、内胴 3 を固定する。このために、押え部 9 の凸球面 10 への圧接による、この凸球面 10 に付く傷を無くすることが可能になる。また、本発明は、腕時計のみならず、提げ時計や置き時計にも適用できることは言うまでもない。

【0028】

【発明の効果】以上説明したように、本発明によれば、内胴固定手段により外胴の凹球面に挿入された内胴を押

え固定することができ、また、内胴固定手段による内胴固定を解除した状態では、内胴は、その凸球面を外胴の凹球面に摺接させた状態で全方向に回転が自在になる。

【0029】したがって、時間表示が自分の好みの位置に来るように内胴を回転させて、この内胴を内胴固定手段により固定することができるために、時間表示を自分の好みの位置に確実に合わせることができ、例えば、時差の関係で時間を変更する場合には、時計本体の 12 時の位置を 3 時方向に一致するように内胴を回転させ、内胴を内胴固定手段により固定することにより、この 12 時の位置を、正確に 3 時方向に一致させることができ、時間変更を容易に行うことができるようになる。

【図面の簡単な説明】

【図 1】本発明に係る内胴回転式時計の分解状態の斜視図である。

【図 2】同内胴回転式時計において内胴固定状態の断面図である。

【図 3】同内胴回転式時計において内胴解放状態の断面図である。

【図 4】（1）は内胴回転式時計において、その内胴の 12 時の位置を所定位置に設定した状態の平面図である。（2）は内胴回転式時計において、その内胴の 12 時の位置を時計回り方向に 3 時方向に一致するように内胴を回転させた状態の平面図である。

【図 5】外胴に対して内胴を縦方向に回転させた状態の斜視図である。

【図 6】外胴に対して内胴を縦方向に回転させた状態の断面図である。

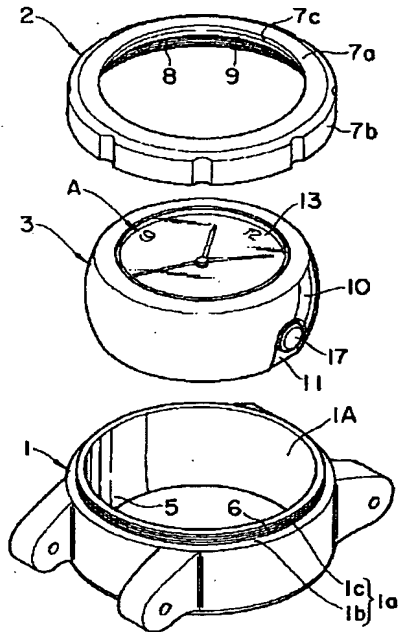
【図 7】内胴回転式時計において、その内胴の外周面に圧接するベゼルの押え部をパッキンで構成した場合の分解状態の一部省略した斜視図である。

【図 8】ベゼルにおける押え部にパッキンを用いた場合の内胴回転式時計において、内胴固定状態の一部省略した断面図である。

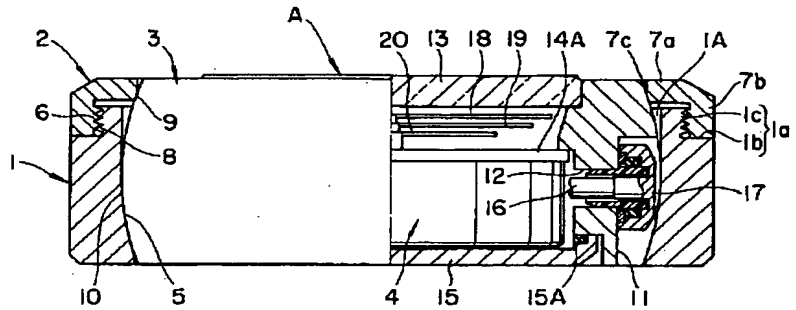
【符号の説明】

- 1 外胴
- 1 A 挿入用口部
- 2 ベゼル（内胴固定手段）
- 3 内胴
- 4 ムーブメント（時計本体）
- 5 凹球面
- 6 雄ねじ部（内胴固定手段）
- 8 雌ねじ部（内胴固定手段）
- 9 押え部（内胴固定手段）
- 10 凸球面

【図 1】



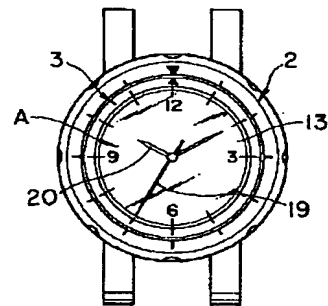
【図 2】



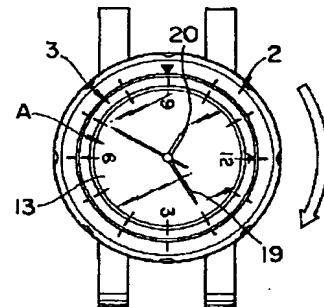
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|----------------|----------------|
| 1 外胴 | 5 凹球面 |
| 1A 挿入用口部 | 6 雄ねじ部（内胴固定手段） |
| 2 ベゼル（内胴固定手段） | 8 雄ねじ部（内胴固定手段） |
| 3 内胴 | 9 押え部（内胴固定手段） |
| 4 ムーブメント（時計本体） | 10 凸球面 |

【図 4】

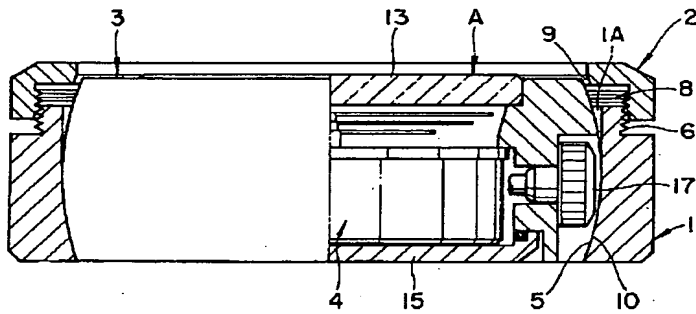
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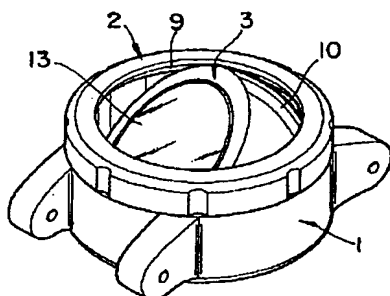
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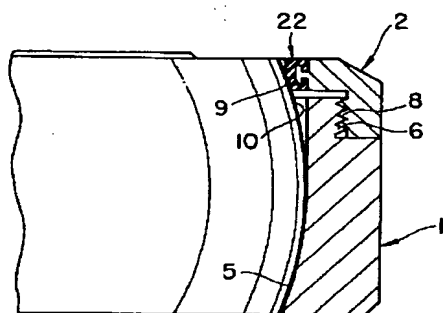
【図 3】



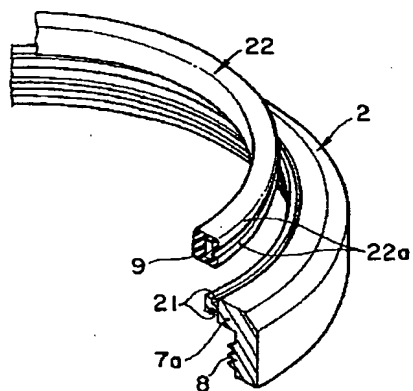
【図 5】



【圖 6】



【图7】



PATENT ABSTRACTS OF JAPAN

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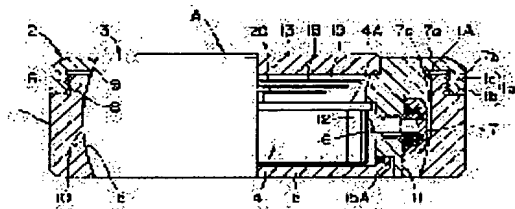
(72)Inventor : HATANAKA HIDEO

(54) INNER BARREL ROTATIVE TIMEPIECE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an inner barrel rotative timepiece wherein a time display is surely set at a desired position by rotating an inner barrel.

SOLUTION: An inner barrel 3 for displaying time is housed inside an outer barrel 1 while rotation is allowed. A convex surface 10 is formed at the outside periphery part of inner barrel 3, and the inside of outer barrel 1 is formed at a concave surface 5 with which the convex surface 10 of inner barrel 3 comes slidingly in contact. At the outer barrel 1, an insert opening part 1A for inserting the inner barrel 3 into the concave surface 5 is formed, and a male-thread part 6 is formed at the outside periphery of insert opening part 1A, and the male-thread part 6 is crewed into a female-thread part 8 to set a bezel 2. At the bezel 2, a pressurizing part 9 which contacts to the inner barrel 3 inserted in the concave surface 5 of outer barrel 1 for suppressing the inner barrel 3 is formed.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

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CLAIMS

[Claim(s)]

[Claim 1] Inside [that forward/backward moving is carried out to said outside drum at said inner shellside, and it is characterized by establishing an inner drum fixed means to press down said inner drum and to fix at the time of advance in a drum rotating type clock while the inner drum which has a body of a clock inside an outside drum was contained pivotable] drum rotating type clock.

[Claim 2] While the inner drum which has a body of a clock inside an outside drum was contained pivotable, in a drum rotating type clock, form the convex spherical surface in the periphery section of said inner drum, and while forming the interior of said outside drum at the concave spherical surface to which said convex spherical surface of said inner drum ****s Inside [that the regio oralis for insertion which inserts said inner drum in said concave spherical surface is formed in said outside drum, forward/backward moving is carried out to said inner shellside inserted at said concave spherical surface of said outside drum at said regio oralis for insertion, and it is characterized by establishing an inner drum fixed means to press down said inner drum and to fix at the time of advance] drum rotating type clock.

[Claim 3] Inside [having formed and constituted the presser-foot section which presses down said inner drum in contact with said inner drum which formed the male screw section in the periphery of said regio oralis for insertion for said inner drum fixed means, was made to screw the female screw section in said male screw section, prepared the bezel, and was inserted in said bezel at said concave spherical surface of said outside drum] drum rotating type clock according to claim 2.

[Claim 4] Inside [having formed the concave spherical surface of the same curvature as said convex spherical surface of said inner drum, and having constituted said presser-foot section in said bezel,] drum rotating type clock according to claim 3.

[Claim 5] Inside [having constituted said presser-foot section from an elastic member with which said bezel was equipped] drum rotating type clock according to claim 3.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to a drum rotating type clock among the wrist watches which contained the inner drum which has a body of a clock inside an outside drum pivotable.

[0002]

[Description of the Prior Art] Conventionally, it considers as the wrist watch which contained the inner drum which has a body of a clock inside an outside drum pivotable, and there is a technique indicated by JP,49-49671,A.

[0003] This wrist watch is equipped with an outside drum and an inner drum. The inner circumference is the concave spherical surface, and an outside drum is the configuration that it can divide into a drum section, the drum section and 2nd outside the 1st outside. That is, the female screw section is formed in the division part of a drum section the 1st outside, and the male screw section is formed in the division part of a drum section the 2nd outside. And by screwing this male screw section in the female screw section, association of the drum section is each-other carried out the 1st and 2nd outside, and it constitutes.

[0004] Moreover, an inner drum has the bodies of a clock (a movement, a windshield, dial face, etc.) in the inner circumference side. The periphery of an inner drum is formed by the convex spherical surface of the same curvature as the concave spherical surface of the inner skin of an outside drum. The ball center which the periphery of an inner drum forms is a match in the ball center which the concave spherical surface forms.

[0005] And it is in the condition which divided the outside drum into the drum section and the drum section outside the ** 2nd the 1st outside, and an inner drum is held in the inner circumference side.

Subsequently, each-other association of the drum section is carried out the 1st and 2nd outside by screwing the male screw section in the female screw section. Then, the convex spherical surface of the periphery of an inner drum is ****ed to the concave spherical surface of inner circumference. In this way, the wrist watch which an inner drum can rotate in all the directions is constituted, without an inner drum pulling out from an outside drum.

[0006]

[Problem(s) to be Solved by the Invention] However, since there was no means to fix a drum even if it rotates an inner drum so that a time amount display may come to its favorite location by the wrist watch which the above inner drums can rotate in all the directions among these, there was a trouble of the ability not to make one's favorite location suspend a time amount display certainly.

[0007] Accomplishing this invention paying attention to this conventional trouble, the place made into the purpose is to offer a drum rotating type clock, while an inner drum is rotated and a time amount display can be certainly set as its favorite location.

[0008]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, according to invention of claim 1, the inner drum inserted in the interior of an outside drum by the inner drum fixed means is pressed down, and it fixes. And if an inner drum fixed means is canceled, rotation of an inner drum will be attained again. Moreover, in order to attain the above-mentioned purpose, according to invention of claim 2, the inner drum inserted in said concave spherical surface of an outside drum by the inner drum fixed means is pressed down, and it fixes. And where the inner drum immobilization by the inner drum fixed means is canceled, rotation becomes free in all the directions in the condition that the inner drum made the convex spherical surface **** to the concave spherical surface of an outside drum.

[0009] Therefore, since an inner drum can be rotated so that a time amount display may come to its favorite location, among these a drum can be fixed with an inner drum fixed means In being able to double a time amount display with one's favorite location certainly, for example, changing time amount due to time difference By rotating an inner drum so that it may be in agreement with a direction in the location at 12:00 of the body of a clock at 3:00, and fixing an inner drum with an inner drum fixed means, the location at these 12:00 can be correctly made in agreement with a direction at 3:00, and a time change can be performed easily.

[0010] In order to attain the above-mentioned purpose, according to invention of claim 3, moreover, by rotating a bezel A bezel by rotating to hard flow with the case of inner drum immobilization by ****ing a bezel, moving to an inner shellside by delivery, making the presser-foot section of a bezel contact the convex spherical surface of an outside drum, and fixing an inner drum A bezel is ****ed, it moves to the opposite side with an inner shellside by delivery, the presser-foot section of a bezel is detached from the peripheral face of an outside drum, and immobilization of an inner drum is canceled. In this condition, rotation becomes free in all the directions in the condition that the inner drum made the peripheral face which consists of that convex spherical surface **** to the concave spherical surface of the inner skin of an outside drum.

[0011] Therefore, by rotating an inner drum so that a time amount display may come to its favorite location, and rotating a bezel Since a bezel is ****ed, it can move to an inner shellside by delivery, the presser-foot section of a bezel can be made to be able to contact the convex spherical surface of an outside drum and an inner drum can be fixed In being able to double a time amount display with one's favorite location certainly, for example, changing time amount due to time difference Even if it rotates an inner drum so that it may be in agreement with a direction at 3:00 in the location at 12:00 of the body of a clock with which an inner drum is equipped, the location at 12:00 cannot shift, the location at 12:00 can certainly be made in agreement with a direction at 3:00, and a time change can be performed easily.

[0012] Moreover, in order to attain the above-mentioned purpose, according to invention of claim 4, by forming the concave spherical surface of the same curvature as said convex spherical surface of said inner drum in said bezel, and constituting said presser-foot section, the presser foot of the inner drum in the case of inner drum immobilization can be ensured, and inner drum immobilization can be ensured.

[0013] Moreover, in order to attain the above-mentioned purpose, according to invention of claim 5, it becomes possible to abolish the blemish by the pressure welding to the peripheral face of the inner drum of the presser-foot section attached to this peripheral face by having constituted from an elastic member with which said bezel was equipped.

[0014]

[Embodiment of the Invention] Hereafter, the example of this invention is explained with reference to a drawing.

[0015] While drawing 1 starts this invention, in the body-rotation type clock in **, the sectional view of an inner drum fixed condition and drawing 3 of the perspective view of the decomposition condition of a drum rotating type clock and drawing 2 are the sectional views of an inner drum release condition in the body-rotation type clock in **.

[0016] the wrist watch as an inner drum rotating type clock -- the outside drum (case) 1, a bezel 2, and the inner drum 3 -- among these, it has the body A of a clock with which the drum 3 was equipped. As shown in drawing 1, as for the place which extends in the direction which conflicts face to face, while is well-known on the outside drum (case) 1, and it is equipped with the arm of a pair, and the arm of the pair of another side. A band is attached in each arm of the pair concerned by the well-known connection means. In this way, the body A of a clock is constituted as a wrist watch. The inner skin of the outside drum 1 is accomplished to the concave spherical surface 5 except for direct tubed regio-oralis 1A for insertion of the upper part. Step 1a covers the perimeter and is formed in the periphery of regio-oralis 1A for insertion of the outside drum 1. This step 1a has horizontal plane section 1b and vertical surface part 1c, and the male screw section 6 is formed in vertical surface part 1c.

[0017] Said bezel 2 is a ring object in plane view, and a cross section is handstand the configuration of L characters which has horizontal level 7a and vertical section 7b. The inner skin of vertical section 7b is covered at the perimeter, and the female screw section 8 is formed. And it presses down in the margo-inferior section of inner skin 7c of horizontal level 7a, the section 9 is formed, and this presser-foot section 9 is formed by the concave spherical surface of the same curvature as the convex spherical surface 10 of the inner drum 3 mentioned later.

[0018] Said inner drum 3 is contained pivotable in the state of sliding in the concave spherical surface 5 of the outside drum 1. The ball center which the peripheral face of the inner drum 3 is formed by the convex

spherical surface 10 of the same curvature as the concave spherical surface 5 of the inner skin of the outside drum 1, and the convex spherical surface 10 of the inner drum 3 forms is a match in the ball center which the concave spherical surface 5 forms. The crevice 11 for RYUZU receipt is formed in this convex spherical surface 10, and the pore 12 from which it escapes inside the inner drum 3 is formed in the pars basilaris ossis occipitalis of this 11 for crevice RYUZU receipt. And a movement 4 is held in the inner drum 3. Moreover, a windshield 13 is attached in top-face opening of the inner drum 3. Dial-face 14A which displays time of day under the windshield 13 makes it located in the top face of a movement 4, and is prepared. The back lid 15 is attached in inferior-surface-of-tongue opening of the outside drum 1 through packing 15A.

[0019] Moreover, the RYUZU shank 16 prepared in the movement 4 has rushed in into the crevice 11 for RYUZU receipt through a pore 12, and RYUZU 17 is attached in this inrush edge. This RYUZU 17 is held in the crevice 11, and, in a date, day-of-the-week correction, and needle doubling second readjustment, can pull out this RYUZU 17 gradually outside the crevice 11 for RYUZU receipt. In addition, as for the second hand and 19, 18 is [the minute hand and 20] hour hands. And the body A of a clock consists of a movement 4, a windshield 13, dial-face 14A, the second hand 18, the minute hand 19, and hour hand 20 grade.

[0020] And the inner drum 3 which equipped the interior with the movement 4 as described above is inserted in the interior from the regio-oralis 1A side for insertion of the outside drum 1. By ***** the convex spherical surface 10 of this inner drum 3 to the concave spherical surface 5 of the inner skin of the outside drum 1, making regio-oralis 1A for insertion of the outside drum 1 screw the female screw section 8 in the male screw section 6 of step 1a of this, forming a bezel 2 in it, and rotating this bezel 2 A bezel 2 is *****ed, it moves to the inner drum 3 side by delivery, the pressure welding of the presser-foot section 9 is carried out to the convex spherical surface 10 of the inner drum 3, the inner drum 3 is fixed to a position, and the wrist watch as an inner drum rotating type clock is constituted. In this case, the inner drum fixed means consists of the male screw section 6 formed in the periphery of regio-oralis 1A for insertion, a bezel 2 which made the female screw section 8 screw in this male screw section 8, and the presser-foot section 9 formed in this bezel 2.

[0021] Next, while it was constituted as mentioned above, actuation of a drum rotating type clock is explained. By rotating said bezel 2 to hard flow with the case of the above-mentioned inner drum immobilization (it rotates so that a bezel 2 may be *****ed and it may move to the inner drum 3 side by delivery, and the inner drum 3 is fixed) A bezel 2 is *****ed and it moves to the opposite side with the inner drum 3 side by delivery, as shown in drawing 3, the presser-foot section 9 of a bezel 3 is detached from the convex spherical surface 10 of the outside drum 1, the pressure welding to the concave spherical surface 5 of the convex spherical surface 10 is canceled, and immobilization of the inner drum 3 is canceled. In this condition, rotation becomes free in all the directions in the condition that the inner drum 3 made that convex spherical surface 10 ***** to the concave spherical surface 5 of the inner skin of the outside drum 1.

[0022] Therefore, the inner drum 3 is rotated such, a bezel 2 is rotated towards inner drum immobilization, a bezel 2 is *****ed, it moves to the inner drum 3 side by delivery, the pressure welding of the presser-foot section 9 is carried out to the convex spherical surface 10 of the inner drum 3 and the inner drum 3 is fixed to double a time amount display with one's favorite location.

[0023] for example, in changing time amount due to time difference As rotate the inner drum 3 so that it may be in agreement with a direction at 3:00 in the location at 12:00 shown in (1) of drawing 4, as shown in (2) of drawing 4, and rotate a bezel 2 towards inner drum immobilization, a bezel 2 is *****ed, it moves to the inner drum 3 side by delivery and it is shown in drawing 2 The pressure welding of the presser-foot section 9 is carried out to the convex spherical surface 10 of the inner drum 3, and the inner drum 3 is fixed.

[0024] Moreover, as shown in drawing 5 and drawing 6, by rotating the inner drum 3 greatly and rotating a bezel 2, a bezel 2 is *****ed, it moves to the inner drum 3 side by delivery, the pressure welding (a grid slash shows a pressure-welding part) of the presser-foot section 9 is carried out to the convex spherical surface 10 of the inner drum 3, and the inner drum 3 is fixed to a position. Therefore, the inner drum 3 can be rotated in all the directions, and it can fix in the posture location. For this reason, the inner drum 3 can be fixed with a favorite posture, and a time amount display becomes legible. Thus, if it leans and fixes along the direction of a front flesh side of the body A of a clock to the outside drum 1 so that the inner drum 3 may be made to start at an angle of predetermined, a time amount display will become legible extremely for a driver while driving an automobile. In order that the shell of the wrist of the driver under operation may turn to an outside, unless the time stamp of the conventional wrist watch usually twists a wrist, it is

because a driver is hard to be checked by looking. By the same reason, it can be used for the rider who drives a two-wheel barrow also as a watch of dedication.

[0025] Moreover, in a date, day-of-the-week correction, and needle doubling second readjustment, a date and day-of-the-week correction, or needle doubling second readjustment is performed by being in the condition whose rotation of the inner drum 3 was enabled, as described above, among these that RIYUZU 17 side's rotating a drum 3 so that it may appear in a way outside the outside drum 1, and pulling out RIYUZU 17 more gradually than the inside of a crevice 11, and rotating.

[0026] While describing above, in the case of the drum rotating type clock, in inner drum immobilization, formed the concave spherical surface, constituted in it the presser-foot section 9 of the bezel 2 which carries out a pressure welding to the convex spherical surface 10 of the inner drum 3 at the margo-inferior section of inner skin 7c of horizontal level 7a, but As shown in drawing 7 and drawing 8, the stop slot 21 along a hoop direction is formed outside among the drawer backs of horizontal level 7a of a bezel 2. It has the shape of a ring made from the spring material, for example, rubber, and periphery section 22a of the both ends is stopped into the stop slot 21, the packing 22 of a cross-section abbreviation C configuration is attached in the drawer back of horizontal level 7a, packing 22 is pressed down, and it is good also as the section 9.

[0027] Therefore, in inner drum immobilization, a bezel 2 is rotated towards inner drum immobilization, a bezel 2 is ****ed, it moves to the inner drum 3 side by delivery, the pressure welding of the presser-foot section 9 which consisted of packing 22 is carried out to the convex spherical surface 10 of the inner drum 3, and the inner drum 3 is fixed. For this reason, it becomes possible to abolish the blemish attached to this convex spherical surface 10 by the pressure welding to the convex spherical surface 10 of the presser-foot section 9. Moreover, it cannot be overemphasized that this invention is applicable not only to a wrist watch but a **** clock and a clock.

[0028]

[Effect of the Invention] As explained above, where it could press down the inner drum inserted in the concave spherical surface of an outside drum by the inner drum fixed means, and it could fix and the inner drum immobilization by the inner drum fixed means is canceled, according to this invention, rotation becomes free in all the directions in the condition that the inner drum made the convex spherical surface **** to the concave spherical surface of an outside drum.

[0029] Therefore, since an inner drum can be rotated so that a time amount display may come to its favorite location, among these a drum can be fixed with an inner drum fixed means In being able to double a time amount display with one's favorite location certainly, for example, changing time amount due to time difference By rotating an inner drum so that it may be in agreement with a direction in the location at 12:00 of the body of a clock at 3:00, and fixing an inner drum with an inner drum fixed means, the location at these 12:00 can be correctly made in agreement with a direction at 3:00, and a time change can be easily performed now.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] While starting this invention, it is the perspective view of the decomposition condition of a drum rotating type clock.

[Drawing 2] In a **** body-rotation type clock, it is the sectional view of an inner drum fixed condition.

[Drawing 3] In a **** body-rotation type clock, it is the sectional view of an inner drum release condition.

[Drawing 4] (1) is a top view in the condition of having set the location at 12:00 of a drum as the predetermined location, in an inner drum rotating type clock. (2) is a top view in the condition of having rotated the inner drum so that it might be in agreement in the direction of a clockwise rotation in a direction in the location at 12:00 of a drum at 3:00, in an inner drum rotating type clock.

[Drawing 5] It is a perspective view in the condition of having made the lengthwise direction rotating an inner drum to an outside drum.

[Drawing 6] It is a sectional view in the condition of having made the lengthwise direction rotating an inner drum to an outside drum.

[Drawing 7] In an inner drum rotating type clock, it is the perspective view which the decomposition condition at the time of constituting the presser-foot section of the bezel which carries out a pressure welding to the peripheral face of a drum from packing omitted the part.

[Drawing 8] In a drum rotating type clock, it is the sectional view which the inner drum fixed condition omitted the part in at the time of using packing for the presser-foot section in a bezel.

[Description of Notations]

1 Outside Drum

1A Regio oris for insertion

2 Bezel (Inner Drum Fixed Means)

3 Inner Drum

4 Movement (Body of Clock)

5 Concave Spherical Surface

6 Male Screw Section (Inner Drum Fixed Means)

8 Female Screw Section (Inner Drum Fixed Means)

9 Presser-Foot Section (Inner Drum Fixed Means)

10 Convex Spherical Surface

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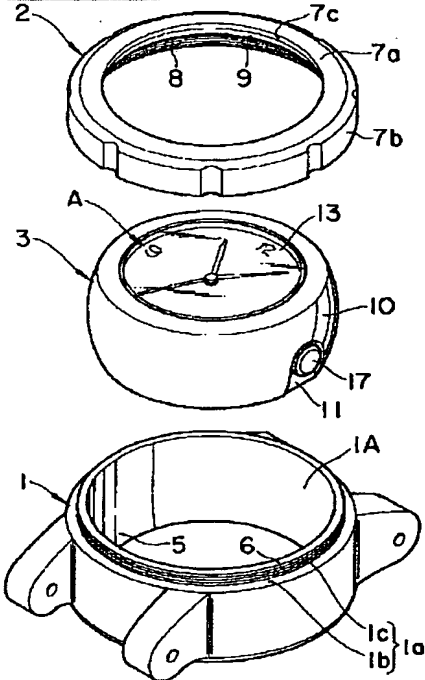
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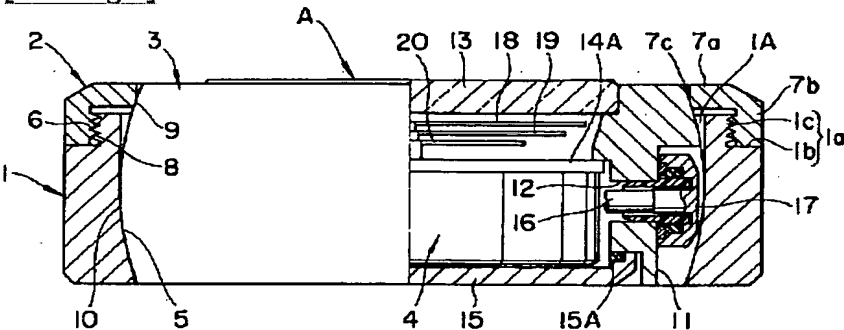
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DRAWINGS

[Drawing 1]

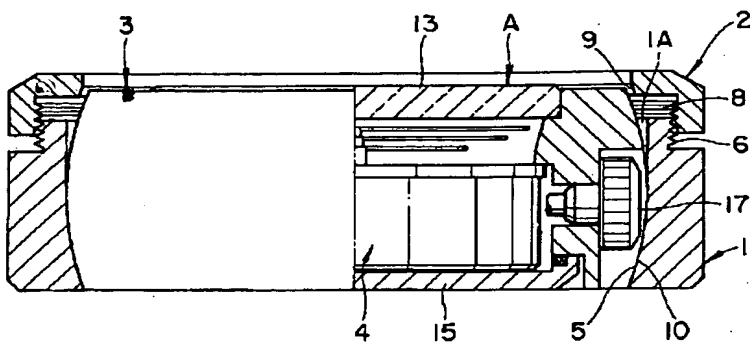


[Drawing 2]



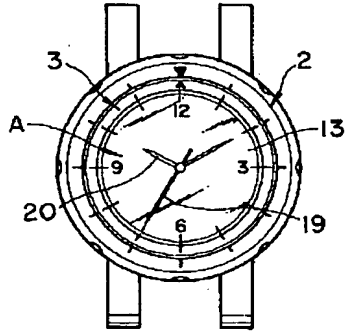
- | | |
|-----------------|-----------------|
| 1 外胴 | 5 凹球面 |
| 1 A 挿入用口部 | 6 雄ねじ部 (内胴固定手段) |
| 2 ベゼル (内胴固定手段) | 8 雌ねじ部 (内胴固定手段) |
| 3 内胴 | 9 押入部 (内胴固定手段) |
| 4 ムーブメント (時計本体) | 10 凸球面 |

[Drawing 3]

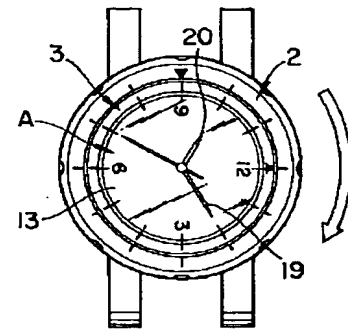


[Drawing 4]

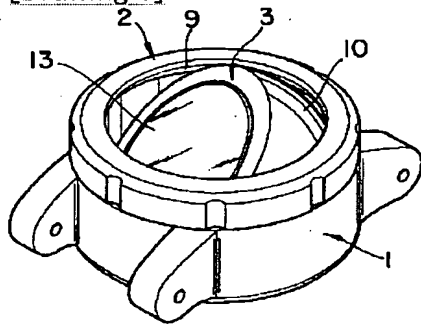
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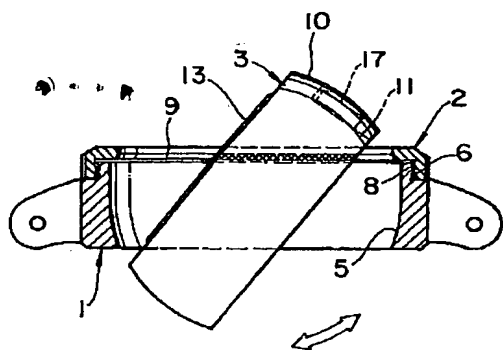
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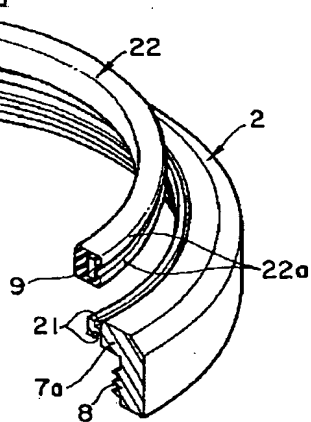
[Drawing 5]



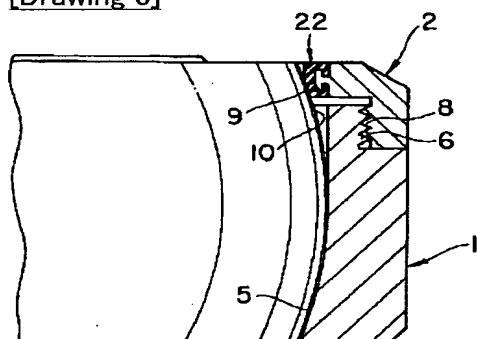
[Drawing 6]



[Drawing 7]



[Drawing 8]



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